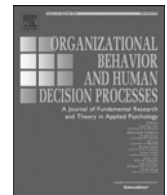


# Exhibit 4



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## Feeling authentic serves as a buffer against rejection

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## ABSTRACT

Social exclusion is a painful yet common experience in many people's personal and professional lives. This research demonstrates that feeling authentic serves as a buffer against social rejection, leading people to experience less social pain. Across five studies, using different manipulations of authenticity, different paradigms to create social exclusion, and different measures of feeling rejected, we found that experiencing authenticity led participants to appraise situations as less threatening and to experience lower feelings of rejection from the social exclusion. We also found that perceived threat explains these effects. Our findings suggest that authenticity may be an underused resource for people who perceive themselves to be, or actually are, socially excluded or ostracized. This research has diverse and important implications: Interventions that increase authenticity could be used to reduce perceptions of threatening situations and the pain of impending exclusion episodes in situations ranging from adjustment to college to organizational orientation programs.

## 1. Introduction

As human beings, we share a fundamental need to create and maintain positive social relationships (Baumeister & Leary, 1995). This need, which likely has evolutionary roots, greatly influences our decisions and behaviors (Leary & Baumeister, 2000). Because failure to have this need met results in feelings of social distress, people view social exclusion—a perceived deficit in belongingness (Stillman et al., 2009)—as a strong threat. In fact, research has shown, social exclusion creates pain (Eisenberger, Lieberman, & Williams, 2003; MacDonald & Leary, 2005; Zadro, Williams, & Richardson, 2004) and leads to both mental and physical health problems (Cacioppo et al., 2006). Even subtle forms of social exclusion (e.g., implicit rather than explicit) elicit pain (Eisenberger et al., 2003). Experiencing rejection can also result in dysfunctional behaviors such as aggression (Twenge, Baumeister, Tice, & Stucke, 2001), self-defeating actions (Twenge, Catanese, & Baumeister, 2002), and dishonesty (Kouchaki & Wareham, 2015). In organizational contexts, feeling socially excluded is detrimental to both how much employees identify with the workplace and to their willingness and effort to contribute to the organization by helping colleagues, offering ideas and suggestions for improvement, and following rules (Wu, Liu, Kwan, & Lee, 2016).

Yet social exclusion does not affect everyone in the same way. Though most research on rejection has focused on recovery from exclusion after it occurs and is experienced, less attention has been paid to date to protective measures *before* exclusion happens. Research in this

line of work has found that threat to belonging can be repaired through social means, such as affirming social values, but not necessarily with other common resources, such as non-social identity affirmations (Knowles, Lucas, Molden, Gardner, & Dean, 2010). In addition, individuals with social support suffer less than others do from social exclusion thanks to having sufficient psychosocial resources (Eisenberger, Taylor, Gable, Hilmert, & Lieberman, 2007). Specifically, Eisenberger and colleagues found evidence for the protective effect of social support—measured by average daily levels of social support with interaction partners—on both neurocognitive and cortisol reactivity to social rejection experienced during a task that participants completed while in the fMRI scanner. Similarly, recent research has found that when mindfulness training preceded ostracism, it yielded the benefit of faster recovery even if it did not reduce people's perceived sense of threat or pain (Molet, Macquet, Lefebvre, & Williams, 2013).

In this paper, we build on this work and propose that one key psychosocial resource available to people when they experience threatening situations such as social exclusion is state authenticity. Psychological research has extensively focused on the impact of people's resources on their stress and well-being (for a review, see Hobfoll, 2002). Psychosocial resources are dispositions that “may help people perceive potentially threatening events as less so and/or help them to manage their responses to events perceived to be threatening” (Taylor et al., 2008: 197). Previous research has found that various psychosocial resources, including psychological control, optimism, and social support, are associated with lower biological and psychological

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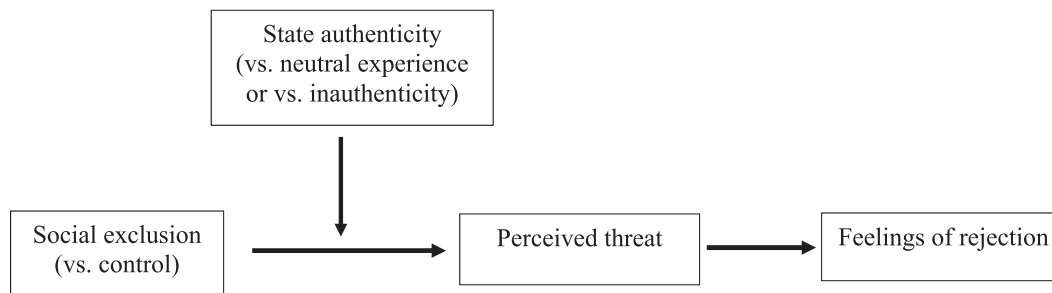


Fig. 1. Theoretical model.

reactivity to stressful events (Taylor et al., 2008). Research has also demonstrated that these resources are moderately intercorrelated but distinguishable (Scheier, Carver, & Bridges, 1994; Taylor et al., 2008). Psychosocial resources determine how people respond to negative events (Aspinwall, 1998; Hobfoll, 1989, 2002), as they can reinforce people against adversity and promote adaptive responses to challenges. People who possess psychosocial resources are more capable of handling threatening, stressful circumstances (Hobfoll, 2002). We suggest that authenticity is a psychosocial resource that shapes people's construal of their circumstances and leads to less social pain after rejection.

Defined as *knowing* and *behaving* in a manner consistent with one's true self (Goldman & Kernis, 2002; Harter, 2002; Kernis & Goldman, 2006), the concept of authenticity has been based on the assumption that people have accurate self-knowledge and can access their true self-concept. Departing from this notion, more recent research has defined authenticity as a *state* or *experience* that fluctuates over time, depending on interactions between the person and her world. Consistent with this view, feelings of authenticity have been shown to vary from moment-to-moment across situations (Lenton, Slabu, & Sedikides, 2016). Moreover, people on either extreme of the trait authenticity continuum have been found to experience feelings of both authenticity and inauthenticity in their daily lives (Lenton, Bruder, Slabu, & Sedikides, 2013).

In this paper, we build on this recent work and focus on authenticity as a *psychological state*—a feeling people have when their behavior and experience is consistent with what they believe their true self to be at any given moment. Entailing a subjective rather than objective evaluation of the self, state authenticity is the feeling of being whom one truly is in a given situation (Lenton et al., 2013). Because feeling authentic is associated with a sense of security and thus a reduced sensitivity to threats, we argue that it serves as a buffer against social exclusion. Specifically, we predict that people who experience authenticity, as compared to those who do not, will appraise challenging social situations, such as being rejected or ostracized, as less threatening and show more adaptive responses when faced with social exclusion, an experience that frustrates the need to belong.

## 2. Authenticity as a psychological state

Early research on authenticity studied it as a stable individual difference and has shown that it is positively associated with subjective well-being, positive affect, and perceived meaning in life (Erickson & Wharton, 1997; Schlegel, Hicks, Arndt, & King, 2009; Sheldon & Kasser, 1998; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997), which are key to healthy psychological functioning (Goldman, 2006; Kernis & Goldman, 2006). This stream of research has also examined how authenticity as a trait differs from related constructs, such as self-esteem, self-concept consistency, and self-concept clarity (e.g., Sheldon et al., 1997). Higher levels of trait authenticity have been found to be associated with greater self-esteem, self-concept clarity, and lower psychological distress (e.g., Bettencourt & Sheldon, 2001; Harter, Marold, Whitesell, & Cobbs, 1996; Kernis & Goldman, 2006; Neff & Suizzo, 2006; Sheldon

et al., 1997).

Similar relationships have been demonstrated more recently for *state* rather than *trait* authenticity (for a recent review, see Sedikides, Slabu, Lenton, & Thomaes, 2017). In situations where individuals feel more authentic, they also report experiencing greater psychological well-being. For instance, when state authenticity was experimentally heightened, it led to higher levels of psychological well-being (Kifer, Heller, Perunovic, & Galinsky, 2013; Thomaes, Sedikides, Van den Bos, Hutteman, & Reijntjes, 2017).

Research has also examined some of the antecedents to state authenticity, including self-determination. Having basic psychological needs for competence, autonomy, and relatedness met (Deci & Ryan, 1985, 1995; Sheldon & Kasser, 1995) is associated with stronger feelings of authenticity, as is self-concept consistency, defined as congruence between one's self-concept and one's experiences (Kraus, Chen, & Keltner, 2011; Rogers, 1961). People are more likely to feel authentic when they engage in positive behaviors, as state authenticity taps into a moral and positive sense of self (Newman, Bloom, & Knobe, 2014). Inauthentic experiences, instead, make people feel less moral and heighten their motivation to reaffirm their self-integrity (Gino, Kouchaki, & Galinsky, 2015; Jongman-Sereno & Leary, 2016).

In this paper, we extend this prior work on state authenticity by suggesting and empirically showing that experiencing authenticity (i.e., feeling authentic in the moment) can provide a protective benefit when it precedes social rejection or other similarly painful experiences. Our theoretical model is summarized in Fig. 1.

## 3. Authenticity lowers the pain of social exclusion

Most of the research on social rejection that has been conducted to date has focused on its various negative effects and on effective coping strategies. For example, research has found that social connection after social rejection speeds recovery (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007). In addition, people are motivated to be close to attachment figures (i.e., significant or close others who can provide emotional security, such as one's spouse) after experiencing a threat such as being socially excluded so that they can relieve their distress (e.g., Mikulincer, Birnbaum, Woddis, & Nachmias, 2000; Mikulincer & Florian, 1998). In fact, reminders of attachment figures reduce people's neurophysiological pain- and stress-related responses after they've experienced social exclusion (Karremans et al., 2011). In another set of studies, Twenge, Zhang et al. (2007) found that, after experiencing social rejection, participants who wrote about a person they were attached to (their favorite family member or their best friend) rather than control topics displayed less aggression toward others, likely because they felt less distress from rejection. After people's sense of security is threatened by social exclusion, thinking of attachment figures helps relieve their distress. The more painful the exclusion is, the higher the level of insecurity one experiences, and the greater the threat one perceives.

Together, this body of work has provided important insights into what can help people cope with the negative outcomes of social

exclusions. Yet they are psychosocial resources available to people *before* exclusion that can help them avoid or lessen such negative outcomes. For instance, social support protects individuals against the pain of social exclusion (Eisenberger et al., 2007). In this paper, we focus on protective benefits available to people *before* they are excluded rather than on their recovery from such experiences. Specifically, we focus on the buffering effects of state authenticity.

Feeling authentic opens the door to critical internal resources, such as one's ability to effectively self-regulate (Kuhl, 1986), carefully process new information (Deci & Ryan, 1991) and be more open to experiences (Sheldon et al., 1997). Indeed, when a person can express her true self, she is less concerned about winning others' approval and defending her self-concept against potential threats. Validation of one's true self has been found to reduce defensiveness (Arndt, Schimel, Greenberg, & Pyszczynski, 2002; Schimel, Arndt, Banko, & Cook, 2004; Schimel, Arndt, Pyszczynski, & Greenberg, 2001). For instance, being accepted for who one is, as compared to being accepted for one's accomplishments, is more likely to reduce defensive distancing from an undesirable other (Schimel et al., 2001). More generally, when people feel authentic—regardless of the source of such feelings—the experience signals to them that their values are being upheld and that they need not fear being rejected for expressing their true self or for not accepting external influence; in turn, this is likely to boost their sense of being buffered against actual rejection. Consistent with this reasoning, prior research has found that trait authenticity is inversely correlated with scores on the Fear of Negative Evaluation (FNE; Watson & Friend, 1969) scale, a measure that captures chronic anxiety about being evaluated negatively by others—in effect, concerns about rejection (Gillath, Sesko, Shaver, & Chun, 2010: Study 2). Thus, building on this work, we suggest that when one's desire to belong is frustrated by social exclusion, authenticity will buffer against the rejection. Specifically, we hypothesize that:

**Hypothesis 1:** There will be an interaction effect of social exclusion (vs. neutral experiences) and experience of authenticity (compared to a neutral experience or to experiencing inauthenticity) on feelings of rejection such that those who experience authenticity will report lower feelings of rejection after being socially excluded.

Now, we turn to examine the underlying mechanism explaining our proposed interaction effect. We suggest that experiencing authenticity buffers people against social rejection by leading them to appraise the threat of being rejected as less severe. Threat appraisals signal the perceived potential for harm, loss, or danger to one's well-being or self-esteem (Lazarus, 1991). The extent to which people construe a situation as threatening depends on two main factors: their perception of the nature and degree of risk that a situation presents and their perception of their available resources or ability to cope with the situation (Lazarus & Folkman, 1984). When their perception of danger is higher than their perception of their available resources or ability to cope, people feel threatened. We suggest that feeling authentic is a psychosocial resource that equips people to cope with the potential of a threat, as in the case of social rejection.

Authenticity produces a sense of security that allows people to relax and avoid the need to constantly monitor their environment and seek validation from others (Schimel et al., 2001). Enhancing perceived security has been found to lead to various positive outcomes, including more positive mood, better self-views, and more positive relationship expectations, as well as greater felt security (such as feeling accepted by others) and less negative attitudes toward outgroup members (Carnelley & Rowe, 2007; Mikulincer & Shaver, 2001, 2007; Mikulincer et al., 2003; Rowe & Carnelley, 2003). The sense of security that accompanies authenticity, we suggest, is likely to lower one's perceptions of threats when they encounter it. The secure sense of self that comes from experiencing authenticity, in fact, is likely to boost individuals' perceived ability to cope and thus lead them to construe situations as less threatening. Since perceived threat is associated with negative

emotional reactions (Folkman & Lazarus, 1985), we expect state authenticity to lead people to experience lower feelings of rejection when excluded by others or when encountering other challenging situations. Building on these findings, we suggest that, as compared to a neutral experience or to experiencing inauthenticity, experiencing authenticity leads people to appraise social exclusion as less threatening. Thus, we hypothesize that:

**Hypothesis 2:** Perceived threat mediates the interactive effect of social exclusion and experience of authenticity on feelings of rejection.

In short, then, we expect social exclusion to be related to feelings of rejection via conditional indirect effects, such that this relationship will be moderated by state authenticity and mediated by perceived threat (see Fig. 1).

#### 4. Overview of studies

We tested our hypotheses on how state authenticity influences people's feelings of rejection after experiencing social exclusion in five studies. Though our theoretical model implies a moderated mediation, we examine different relationships across our studies. Study 1 provides an initial demonstration of the link between state authenticity and reduced feelings of rejections, using a vignette to create social exclusion. Study 2 examines the interactive effect of authenticity and social exclusion showing that authenticity results in lower feelings of rejection after social exclusion, but does not generally trigger a sense of inclusion in neutral situations. In Studies 3–5, we test for the psychological mechanism explaining the interactive effect of state authenticity and lower feelings of rejection after exclusion: perceived threat. We show evidence for the mediating role of perceived threat in Studies 3 and 4 and in a longitudinal study (Study 5). In Study 5, to examine the practical implications of our research, we use an intervention study in the field to increase authenticity among employees and find reduced perceptions of exclusion at work.

In most of our studies, we measure participants' perception of their rejection experience (e.g., the extent to which they feel excluded, disconnected, or left out), which has been shown to be related to feeling hurt (Zadro et al., 2004). However, in Study 2, we rely on a behavioral measure capturing participants' desire for inclusion after rejection.

For our studies, we report all participants recruited, all variables measured, and all conditions included in the study designs. No participants who completed our studies were excluded from the analyses unless otherwise noted for reasons identified prior to conducting the research.

#### 5. Manipulating authenticity

In our studies, we used four manipulations for authenticity: a writing task (Study 1), an attribute-listing task adapted from Schlegel et al. (2009) (Study 2), wearing the wristband of one's favorite sport team (Study 3), or asking participants to behave authentically (Studies 4 and 5). We pilot-tested all of these manipulations to assure they would generate differences in state authenticity. The Online Supplement includes details on our pilot studies.

Most prior experimental research on the effects of state authenticity on various outcomes has employed a writing manipulation to trigger feelings of authenticity in the moment, which has been found to be effective (Gino et al., 2015; Kifer et al., 2013). For Study 3, in which we used a wristband to manipulate authenticity, we recruited baseball fans and gave them the wristband of either their favorite team (authenticity condition) or a rival team (inauthenticity condition) to wear during the study. We chose a wristband to manipulate people's feelings of authenticity based on prior research showing a direct link between what individuals wear and their feeling authentic or inauthentic (Gino, Norton, & Ariely, 2010).

Each manipulation has weaknesses and strengths, which we point



out in the General Discussion section. The consistency of our findings across different manipulations gives us confidence that they allowed us to reliably induce state authenticity and examine its effects.

## 6. Study 1: Buffering effects of authenticity

In Study 1, we provide an initial test of Hypothesis 1 by inducing authenticity in some participants but not others and measuring their reactions to a vignette in which they were asked to imagine being socially rejected.

### 6.1. Method

#### 6.1.1. Participants and design

One hundred forty-seven individuals (48.3% male;  $M_{age} = 24.1$ ,  $SD = 4.6$ ) from a city in the Northeastern United States participated in this study for pay. The study was part of an hour-long session of studies for which participants were paid \$20. We randomly assigned participants to one of three conditions: authenticity vs. inauthenticity vs. neutral experience. We calculated our sample size based on an estimate of a medium effect size ( $f = 0.25$ ), requiring a sample size of approximately 50 participants per condition for a study powered at 80%. These numbers are also consistent with the recommendations of Simmons, Nelson, and Simonsohn (2011). The sample size was determined by the number of participants who showed up during the scheduled sessions. Before conducting the study, we planned to stop data collection after the scheduled sessions were over, hoping to recruit at least about 50 participants for each condition.

Following a decision made before we conducted the study, we excluded the responses of three participants who failed the manipulation check, which asked them to indicate what type of essay they wrote. We conducted analyses on the remaining 144 observations.

#### 6.1.2. Procedure

We told participants that they would complete a few unrelated tasks. For the first task, the instructions informed them that the researchers were interested in studying how people remember and reflect on events from their past. In each condition, we asked participants to recall a certain event and then write about it for a few minutes, as we were “interested in how people remember and reflect on events from their past.” Participants were randomly assigned to one of three conditions: authenticity vs. inauthenticity vs. control. In the *authenticity* [*inauthenticity*] condition, the instructions to the recall and writing task read (as in Gino et al., 2015):

Please recall a time in your personal or professional life when you behaved in a way that made you feel *true* [*untrue*] to yourself, that made you feel *authentic* [*inauthentic*]. It should just be a situation in which you felt *authentic* [*inauthentic*] with your core self.  
Please describe the details about this situation that made you feel authentic. What was it like to be in this situation? What thoughts and feelings did you experience?

Participants in the neutral condition instead were asked to recall and write about a neutral experience, namely how they spend their evenings, and were asked to describe a typical instance (as in Gino et al., 2015).

After this writing task, participants answered demographic questions about their age and gender. Next, they read a story about a person suffering from a romantic breakup (DeWall & Baumeister, 2006) and were asked to take a first-person perspective by putting themselves in the shoes of the main character. We matched the participants' gender with the story content. The essay read (in part):

Two days ago, I broke up with my boyfriend (girlfriend). We've been going out since our junior year in high school and have been really close, and it's been great being together. I thought he (she) felt the

same, but things have changed. Now, he (she) wants to date other people. He (she) says he (she) still cares a lot about me, but he (she) doesn't want to be tied down to just one person. It's all I think about.

Afterwards, participants in all three conditions indicated how they felt at that moment on a seven-point scale (1 = not at all, 7 = extremely). We measured feelings of rejection with two items: disconnected and rejected ( $\alpha = 0.75$ ).<sup>1</sup> Given the simplicity of our study design, we used these items to succinctly capture the key aspects of feeling rejected that are commonly measured in the social exclusion literature, namely being rejected and not being able to make a connection or bond with others.

Next, participants completed the Positive and Negative Affectivity Schedule (PANAS; Watson, Clark, & Tellegen, 1988). For the PANAS, participants responded to both positive ( $\alpha = 0.92$ ) and negative ( $\alpha = 0.94$ ) affect items.

At the end of the study, as a manipulation check, we first asked participants to think back to the initial writing task and indicate the extent to which the described event made them feel inauthentic on a seven-point scale (1 = not at all, 7 = extremely). Next, they indicated whether they had written about an event that made them feel authentic, an event that made them feel inauthentic, or how they spend their evenings. Responses of three participants who failed to answer this question correctly were excluded.

### 6.2. Results

#### 6.2.1. Manipulation check: Feeling inauthentic

A one-way analysis of variance (ANOVA) on the inauthenticity item revealed a significant difference across conditions,  $F(2, 141) = 38.74$ ,  $p < .001$ ,  $\eta_p^2 = 0.36$ . Participants in the authenticity condition felt significantly less inauthentic ( $M = 2.00$ ,  $SD = 1.16$ ) than did participants in the neutral condition ( $M = 2.98$ ,  $SD = 1.63$ ,  $p = .003$ ) and the inauthenticity condition ( $M = 4.96$ ,  $SD = 1.85$ ,  $p < .001$ ).

#### 6.2.2. Perceived rejection

Feelings of rejection also varied by condition,  $F(2, 141) = 3.40$ ,  $p = .036$ ,  $\eta_p^2 = 0.05$ . Participants in the authenticity condition reported lower feelings of rejection ( $M = 4.76$ ,  $SD = 1.66$ ) as compared to those in both the neutral condition ( $M = 5.45$ ,  $SD = 1.43$ ,  $p = .032$ ) and the inauthenticity condition ( $M = 5.42$ ,  $SD = 1.26$ ,  $p = .032$ ). There was no significant difference in feelings of rejection between the neutral and the inauthenticity conditions ( $p = .91$ ).

#### 6.2.3. Positive and negative affect

Neither positive ( $F(2, 141) = 0.61$ ,  $p = .55$ ,  $\eta_p^2 = 0.01$ ) nor negative affect ( $F(2, 141) = 1.03$ ,  $p = .36$ ,  $\eta_p^2 = 0.01$ ) significantly differed across conditions. Importantly, the nature and significance of our results for perceived rejection did not change when we controlled for positive and negative affect in our analyses.

<sup>1</sup> A similar approach, where feelings of rejection have been captured by only a few items (two to four), has been used in other studies (e.g., Aydin, Fischer, & Frey, 2010; Derfler-Rozin et al., 2010; Romero-Canyas et al., 2010). In the study, we originally included a third item: powerless, to capture the feeling of not having control (an additional key aspect of feeling rejected). When creating a composite measure with all three items, reliability was higher ( $\alpha = 0.81$ ). Analyses with three items yield consistent results: reported feelings varied by condition,  $F(2, 141) = 3.43$ ,  $p = .035$ . Participants in the authenticity condition reported lower feelings of rejection ( $M = 4.70$ ,  $SD = 1.68$ ) as compared to those in both the neutral condition ( $M = 5.45$ ,  $SD = 1.43$ ,  $p = .032$ ) and the inauthenticity condition ( $M = 5.38$ ,  $SD = 1.42$ ). We report the results with the two-item measure in the paper based on a suggestion from the review team.

### 6.3. Discussion

These results provide initial evidence in support of Hypothesis 1: as compared to both a control condition and a condition where participants felt inauthentic, those who felt authentic reported lower feelings of rejection after a romantic breakup.

## 7. Study 2: Authenticity lowers feelings of rejection only after exclusion

In our next study, we provide a full test for Hypothesis 1 by including a control condition in which participants are not socially excluded. In this way, we can assure that authenticity buffers the effects of social exclusion by showing that (1) participants feel less rejected when experiencing social exclusion in the authenticity than in the control condition (as in Study 1), and that (2) these positive benefits only occur after social exclusion. It is possible, in fact, that participants who experience authenticity simply feel more included overall, irrespective of whether they experienced social exclusion or not. To examine this possibility, we use a 2x2 design in which we cross social exclusion with an authenticity manipulation and assess the effect of these two manipulations on feelings of rejection. We predict that participants in the authenticity condition would report lower levels of feelings of exclusion after being rejected as compared to those in the neutral experience condition (as in Study 1) and that this difference would disappear in the control condition, as these participants do not experience social exclusion.

To create social exclusion, rather than relying on a vignette, as in Study 1, Study 2 experimentally creates social rejection by having participants believe that others have rejected them as social interaction partners, a manipulation that has been used successfully in previous research on social exclusion (e.g., Bushman, Bonacci, Van Dijk, & Baumeister, 2003; DeWall, Twenge, Gitter, & Baumeister, 2009; Maner, DeWall, Baumeister, & Schaller, 2007; Stillman et al., 2009; Williams, 2002; Williams & Sommer, 1997).

### 7.1. Method

#### 7.1.1. Participants and design

Four hundred and two individuals (52% male;  $M_{age} = 35.08$ ,  $SD = 10.01$ ) from Amazon MTurk participated in the study for \$2. Participants were randomly assigned to one of four conditions in a 2 (social exclusion vs. control)  $\times$  2 (authenticity vs. neutral experience) between-subjects design. Ten participants dropped out of the study before the authenticity manipulation took place (and before knowing whether they had been rejected or not). Thus, we conducted analyses on data from the remaining 392 participants. Given the nature of our design, we hoped to recruit about 100 participants for each condition and were, in fact, able to reach that number during the time the study was open to participants.

#### 7.1.2. Procedure

After consenting to participate in the study, participants were told that we were interested in understanding the dynamics of group interactions and how these interactions may affect group members' performance. To do so, they were told they would be "participating in a simulation with other participants to work and communicate with and make decisions that may affect everyone's outcomes." In reality, participants completed the study on their own, with no one else, but we made them believe otherwise to manipulate social exclusion. Participants also learned that everyone would start the study with a partner preference task that would be used to determine group membership for the group task, which they would complete later in the study. Participants indicated their first name (consistent with past research, Twenge et al., 2001) and, after a brief delay (supposedly due to the creation of the group assignment), were told that their group of four

members was complete and told their group number.

Participants then moved onto the partner preference task, which we used to manipulate social exclusion (a manipulation we adapted from Derfler-Rozin, Pillutla, & Thau, 2010). The instructions read:

Before you start working as part of a team, you are asked to write a short essay promoting yourself to 3 of the other group members who are also participating in the study and were randomly matched with you. Specifically, you are supposed to write a short essay saying why you should be included in the next group task and try to include specific examples to substantiate. Afterwards, each member will evaluate the essays of the other participants. The group task may involve additional payment based on group performance. The writing task will take 3 min.

Please spend a few minutes writing a short persuasive essay promoting yourself to 3 of the other group members who are also participating in the study. Write about why you should be included in the next group task and try to include specific examples to substantiate. Afterwards, each member will evaluate your essay, and you read their essays.

After working on their essay, participants were given the essays from their team members and asked to read them carefully. They were then asked, based on the essays they had read, to choose two members they wanted to work with.

Next, the instructions informed participants that while other members of the group finished their selections, they would move on to a different task. We used the next task as our manipulation of authenticity. For this manipulation, we used an attribute-listing task adapted from Schlegel et al. (2009) and pilot-tested it prior to the study to show that it is an effective manipulation for raising feelings of authenticity in the moment. Participants in the neutral-experience condition were told:

Please write down 10 words that you feel are indicative of your "actual self." The actual self is referred to the "everyday self" and is defined as traits that describe "who you are during most of your daily activities, even if these traits don't reflect who you really are."

Those assigned to the authenticity condition instead were told:

Please write down 10 words that you feel are indicative of your "true self." The true self is defined as traits that describe "who you believe you really are, even if you sometimes act in different ways."

Participants were then asked to wait while their team members reached the same page in the survey. After some delay (again, to make the wait seem real), participants who had been randomly assigned to the social exclusion condition were shown a table with the names of each team member (including theirs) and a yes or no next to each to indicate whether the person had been selected for the group simulation. The table was accompanied by feedback that stated, "Based on the member preference exercise, nobody chose you to be the group member to work with. Given this feedback, you will skip Task 2 (the group simulation) and will now proceed to Task 3 (a questionnaire)."

Participants who had been randomly assigned to the control (no-exclusion) condition did not receive any information or feedback about the member preference exercise. Next, all participants moved to a product choices task, which we used to assess our dependent measure. Previous research has found that, relative to participants in a control condition or in a condition in which they felt included, those in a social-exclusion condition report a stronger desire for affiliation (Mead, Baumeister, Stillman, Rawn, & Vohs, 2011). Rather than relying on self-reports of feelings of rejection, we used this behavioral measure, which captures participants' desire for inclusion (as in Mead et al., 2011). Participants were presented with a picture of four different products (a T-shirt, a backpack, a Swatch watch, and a tea kettle). They were told that two of the products were ones that most MTurkers (i.e., people like them) had indicated not liking that much, and two were products most MTurkers indicated liking a lot. For each, participants were asked to

indicate how desirable they found the product to be on a 7-point Likert-type scale ranging from 1 (not desirable at all) to 7 (very desirable).

Next, participants were asked to think back to the 10 attributes they had written about themselves and indicate their agreement with two statements measuring state authenticity ( $\alpha = 0.81$ ) on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree): “I am in touch with my ‘true self,’” and “I feel free to be my authentic self.”<sup>2</sup>

Next, on the same 7-point scale, participants were asked to indicate their agreement with three statements capturing how they felt at that moment, which we used to measure self-esteem (adapted from Rosenberg’s self-esteem scale, see Rosenberg, 1965): “I take a positive attitude toward myself,” “I think I have many positive qualities,” and “I am quite satisfied with who I am” ( $\alpha = 0.90$ ). Participants then indicated the extent to which they felt each of various emotions at that moment, using a scale ranging from 1 (very slightly or not at all) to 5 (very much). We used five items from the short form of the Positive and Negative Affect Schedule (PANAS-X; Mackinnon et al., 1999) to capture positive affect ( $\alpha = 0.84$ ) and five items to measure negative affect ( $\alpha = 0.91$ ). We included these items measuring affect so that we could test the robustness of the role of authenticity as a buffer against rejection while controlling for them.

Finally, participants answered a few demographic questions.

## 7.2. Results

### 7.2.1. Manipulation check: Feeling authentic

A 2 (social exclusion)  $\times$  2 (authenticity) between-subjects ANOVA on our manipulation check for state authenticity revealed a significant difference for our authenticity manipulation,  $F(1, 388) = 11.11$ ,  $p = .001$ ,  $\eta_p^2 = 0.028$ . Participants in the authenticity condition felt significantly more like their true self ( $M = 6.06$ ,  $SD = 0.83$ ) than did participants in the neutral experience condition ( $M = 5.75$ ,  $SD = 1.02$ ).

### 7.2.2. DV: Desire for affiliation

We captured our main dependent measure by assessing participants’ desire for affiliation through their preferences for products other people like them indicated liking (as in Mead et al., 2011). A 2 (social exclusion)  $\times$  2 (authenticity) between-subjects ANOVA on participants’ expressed desirability for popular products revealed the expected significant interaction,  $F(1, 388) = 6.70$ ,  $p = .01$ ,  $\eta_p^2 = 0.017$  (see Fig. 2). Pairwise comparisons revealed that in the social exclusion condition, participants reported lower desirability for products signaling their desire for affiliation in the authenticity condition ( $M = 3.84$ ,  $SD = 1.42$ ) than in the neutral experience condition ( $M = 4.32$ ,  $SD = 1.31$ ,  $p = .01$ ). Instead, in the control condition (when participants were not socially excluded), there were no differences between the authenticity conditions ( $p = .29$ ). However, participants’ expressed desirability for control products did not vary based on our manipulations (all  $p$ s  $> 0.29$ , see Fig. 2). The nature and significance of our results for desire for affiliation did not change when we controlled for positive and negative affect in our analyses.

### 7.2.3. Self-esteem; positive and negative affect

A 2  $\times$  2 ANOVA on participants’ self-esteem revealed no significant effects (all  $p$ s  $> 0.11$ ). As for affect, using similar ANOVAs, we found no significant effects (all  $p$ s  $> 0.15$ ) other than a marginally significant effect for social exclusion on positive affect ( $F(1, 388) = 3.05$ ,  $p = .082$ ,  $\eta_p^2 = 0.008$ ) and a significant effect for the same manipulation on

negative affect ( $F(1, 388) = 3.97$ ,  $p = .047$ ,  $\eta_p^2 = 0.01$ ).

## 7.3. Discussion

The results of this study provide direct evidence supporting Hypothesis 1 by showing that authenticity serves as a buffer against social rejection and does not enhance feelings of inclusion in general.

## 8. Study 3: Authenticity triggered by being a sports fan

In Study 3, we provide further evidence for the relationship between state authenticity and feelings of rejection after social exclusion by using yet another manipulation for authenticity and also a behavioral experience of social rejection. In this study, we also tested our second hypothesis by examining whether authenticity leads individuals to appraise situations in less threatening terms—our proposed psychological mechanism.

### 8.1. Method

#### 8.1.1. Participants and design

Four hundred eighteen individuals (49% male;  $M_{age} = 24.44$ ,  $SD = 4.63$ ) from a city in the Northeastern United States participated in this study for pay. This study was part of an hour-long series of studies for which participants received \$20 as compensation. In this study, we did not manipulate social exclusion: Rather, we used a paradigm where all participants were made to feel socially excluded (as in Study 1). We randomly assigned participants to one of two conditions: authenticity vs. inauthenticity. We targeted a larger sample in this study because the findings from an earlier study we conducted with our manipulation of exclusion (Cyberball) showed a small effect for this particular manipulation. We recruited participants who indicated being interested in sports and supporting the Major League Baseball team in the city where the study took place.

#### 8.1.2. Procedure

Participants were informed that they would complete several tasks, the first of which consisted of evaluating a product and answering a few questions about it. Next, they would be asked to engage in a short task and then answer a short questionnaire.

For their first task, participants were asked to wear a wristband they found at their desk so that they could later comment on its level of comfort. We used the wristband to manipulate authenticity (see the Online Supplement for details on this manipulation). The wristband, in fact, varied by condition. In the authenticity condition, participants were asked to wear a wristband of the baseball team of the city where the study took place (i.e., a Boston Red Sox wristband, see Fig. 3). In the inauthenticity condition, participants received the wristband of one of the hometown team’s main opposing and rival teams (i.e., the New York Yankees). Participants provided a brief description of the wristband they were evaluating and then indicated the team the wristband supported. As a manipulation check for the effectiveness of this manipulation, we then asked participants to indicate the extent to which they thought the wristband was popular (i.e., was one that people are attracted to and want to wear) on a 5-point scale (ranging from 1 = Not at all, to 5 = Very much).

Next, we told the participants that we would ask them a few other questions about the wristband in a few minutes. In the meantime, while they were still wearing their wristbands, we asked them to complete an interactive ball-tossing game called Cyberball for about two minutes. Similar to prior work (Zadro et al., 2004), the instructions informed participants that the study examined the effects of mental visualization and that they would be playing an Internet ball-toss game on the computer as a way to engage and practice this skill. The instructions also informed participants that their performance in the game was not important. Participants all saw a ball, two other players on the left and

<sup>2</sup> We used two items because we had pilot-tested the effectiveness of our authenticity manipulation on another sample of participants prior to conducting this study and found evidence that the manipulation was effective in raising state authenticity (assessed with the same seven items as in Pilot Study 1 reported in the Online Supplement).



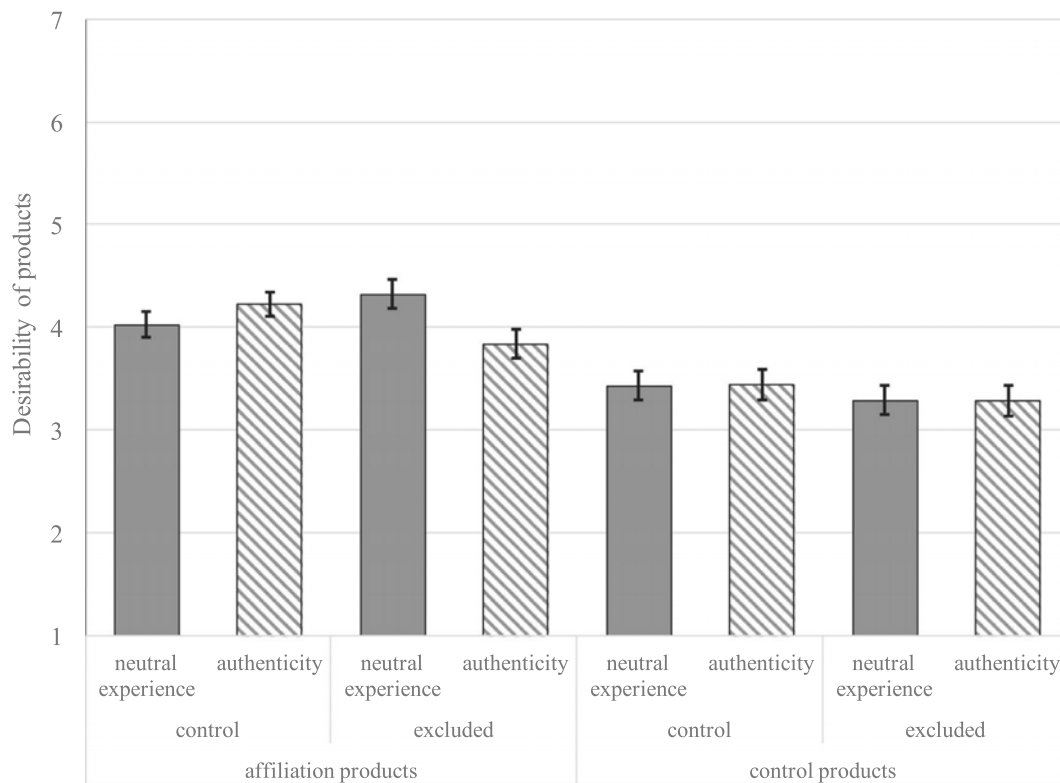


Fig. 2. Means of desirability of affiliation and control products by condition (error bars represent standard errors of the means), Study 2.



Fig. 3. Wristbands used for the authenticity manipulation in Study 3.

right sides of the screen, and an arm representing the participant on the lower center part of the screen. The other players threw the ball to each other or to the participant, waiting about 1–2 s (determined randomly) before each throw to make the participant believe he or she was actually playing with other people. The participant could return the ball to one of the players by clicking on the name of the chosen player. During the first part of the task, the participant received ten throws. After this point, the other two players stopped throwing the ball to the participant for the rest of the game.

Once the game was over, in each condition, participants completed a short questionnaire that assessed their feelings of inclusion and

rejection. We selected these items from those used in prior research (see Zadro et al., 2004), as they most directly captured our dependent measure of interest. In particular, we asked participants to choose the best answer to describe the feelings they experienced during the game using a 7-point scale (from 1 = not at all, to 7 = extremely). The items measuring perceived rejection were: “I felt disconnected,” “I felt rejected,” and “I felt like an outsider” ( $\alpha = 0.94$ ). The items measuring perceived inclusion were: “I felt I belonged to the group” and “I felt the other players interacted with me a lot” ( $\alpha = 0.79$ ).

Participants were also asked, “Assuming the ball should be thrown to each person equally (33% of throws to each for three players), what percentage of throws did you receive? (type a number between 0 and 100).” We used this measure to capture the degree to which participants appraised the situation in threatening terms. Though this measure has been also used as a proxy for rejection itself (Zadro et al., 2004), we used it to assess our mediator of interest, since it assessed participants’ perceptions of the extent to which others left them out of the game.

Next, as a manipulation check for our authenticity manipulation, we asked participants to answer a few questions about the wristband. In particular, they indicated their agreement with four statements (adapted from Gino et al., 2015): (1) This product makes me feel out of touch with the “real me”; (2) This product makes me feel as if I don’t know myself very well; (3) This product makes me feel authentic (reverse-coded); and (4) This product makes me feel true to myself (reverse-coded). We averaged these items into a measure of self-alienation ( $\alpha = 0.57$ ).<sup>3</sup>

Next, we asked participants whether they were interested in buying the wristband and to indicate the extent to which they considered themselves to be a Red Sox fan.

Finally, participants answered demographic questions about their

<sup>3</sup> The reliability of this scale is rather low, likely due to the fact that we asked questions that directly referenced the product participants were asked to wear. However, we are reassured by the results of the pilot study we conducted with a similar manipulation and a different scale to measure state authenticity.



age and gender.

## 8.2. Results

### 8.2.1. Manipulation check #1: Reactions to the wristband

Participants in the authenticity condition found the wristband to be more popular ( $M = 3.38$ ,  $SD = 1.16$ ) than did those in the inauthenticity condition ( $M = 2.97$ ,  $SD = 1.24$ ),  $t(416) = 3.43$ ,  $p = .001$ ,  $d = 0.34$ . Mirroring these results, those in the authenticity condition expressed a greater interest in buying the wristband they were wearing during the study (17.8% (40/225) vs. 9.3% (18/193)),  $\chi^2(1, N = 418) = 6.21$ ,  $p = .013$ , Cramer's  $V = 0.12$ .

### 8.2.2. Manipulation check #2: Perceived self-alienation

Participants in the authenticity condition reported lower levels of self-alienation ( $M = 4.02$ ,  $SD = 1.03$ ) as compared to those in the inauthenticity condition ( $M = 4.32$ ,  $SD = 1.14$ ),  $t(411) = -2.86$ ,  $p = .004$ ,  $d = 0.28$ .

### 8.2.3. Feelings of rejection and inclusion

Participants in the authenticity condition reported lower levels of perceived rejection ( $M = 4.59$ ,  $SD = 1.77$ ) than did those in the inauthenticity condition ( $M = 5.04$ ,  $SD = 1.77$ ),  $t(416) = -2.56$ ,  $p = .011$ ,  $d = 0.25$ , as well as higher levels of inclusion ( $M_{\text{authenticity}} = 2.25$ ,  $SD = 1.27$  vs.  $M_{\text{inauthenticity}} = 1.87$ ,  $SD = 1.15$ ),  $t(416) = 2.93$ ,  $p = .004$ ,  $d = 0.31$ .

### 8.2.4. Perceived threat

Participants in the authenticity condition reported receiving the ball more ( $M = 10.52$ ,  $SD = 9.51$ ) than did participants in the inauthenticity condition ( $M = 8.69$ ,  $SD = 8.44$ ),  $t(415) = 2.07$ ,  $p = .04$ ,  $d = 0.20$ .

### 8.2.5. Mediation

We ran mediation models using the bootstrapping approach outlined by Preacher and Hayes (2008). We estimated the direct and indirect effects of the authenticity condition via our proposed mediator (perceived threat) on each of our dependent variables: feelings of rejection and feelings of inclusion. Based on a bootstrapping (with 10,000 iterations) analysis, our manipulation had a significant effect on perceived threat ( $B = 1.83$ ,  $S.E. = 0.89$ ,  $p = .04$ ), which, in turn, significantly affected feelings of rejection ( $B = -0.03$ ,  $S.E. = 0.01$ ,  $p = .005$ ) and also feelings of inclusion ( $B = 0.04$ ,  $S.E. = 0.01$ ,  $p < .001$ ). The 95% bias-corrected confidence interval for the size of the indirect effect excluded zero for perceived threat when the dependent measure was feelings of rejections  $[-0.141, -0.0002]$  and also when it was feelings of inclusion  $[0.001, 0.157]$ , suggesting mediation.

### 8.2.6. Being a Red Sox fan

Importantly, we did not find significant differences in the extent to which participants considered themselves to be a Red Sox fan between the two conditions ( $M_{\text{authenticity}} = 4.02$ ,  $SD = 1.03$  vs.  $M_{\text{inauthenticity}} = 4.32$ ,  $SD = 1.14$ ),  $t(416) < 1$ .

## 8.3. Discussion

The results of Study 3 provide further support for our arguments: as compared to participants who were made to feel inauthentic, those who were made to feel authentic reported feeling less rejected and more included after being socially excluded in a group game. In addition, as predicted authenticity led people to appraise the same exact situation as less threatening, which resulted in lower feelings of rejection.

## 9. Study 4: Moderated mediation

In our previous study, we found initial evidence for the role of

perceived threat as mediator of the relationship between authenticity and feelings of rejections after social exclusion. In Study 4, we test our full moderated mediation model depicted in Fig. 1. We manipulate both state authenticity (authenticity vs control) and the presence of a challenging situation (i.e., the use of non-inclusive, threatening language during an interview), and measure both perceived threat and feelings of rejection. We expect to find a significant interaction between these two manipulations so that authenticity buffers the effect of the challenging situation on perceived threat and, ultimately, on feelings of rejection. Because authenticity lowers perceptions of threat, as we reasoned, we expect it to be particularly helpful in buffering feelings of rejection on tasks that are threatening. By contrast, on tasks that are neutral (i.e., not threatening), we expect authenticity not be as “beneficial” because there is less of a need for a buffer. In other words, we expect the difference between authenticity and control to be larger on feelings of rejection in the challenging situation than in the neutral one.

### 9.1. Method

#### 9.1.1. Participants and design

Five hundred ninety-eight female working adults ( $M_{\text{age}} = 36.95$ ,  $SD = 8.90$ ) recruited from Amazon MTurk (all located in the United States and employed full time) participated in a 30-minute online study for \$6. Participants were first asked to answer two attention checks. Those who failed either attention checks were brought to a screen letting them know that they could not continue with the study. Their data was not recorded. We recruited 600 participants, but only 588 completed the study in the time allotted.

Participants were randomly assigned to one of four conditions in a 2 (challenging situation vs. control)  $\times$  2 (authenticity vs. neutral experience) between-subjects design.

#### 9.1.2. Procedure

After the attention checks, those participants who passed them both saw instructions welcoming them to the study. We asked them to first answer demographic questions (age and gender) and then to indicate the extent to which they thought they were effective in interacting with others (e.g., during job interviews or the first time you meet someone), using a 7-point scale (ranging from 1 = not at all, to 7 = very much so).

Next, adapting a paradigm and instructions used in Stout and Dasgupta (2013) Study 1, we told participants that we were conducting this study in collaboration with a career development program at a university in the Northeastern United States. The instructions read,

The mission of this program is to prepare students to enter the workforce by offering practice job interviews. In this study, we will assess which, among a variety of interviewing formats, seems most helpful to prepare students for the job market.

You will be paired with one of our research assistants and asked to work on this mock interview. You will now be paired with the research assistant.

Participants were asked to wait until they had been paired with the research assistant, a process that would take a minute or so. As they waited for the pairing to happen, the instructions asked them to start thinking about the mock interview (as in the performance goal condition of Study 1 in Stout & Dasgupta, 2013).

You'll play the role of the candidate looking for a job.

During the interview, try to focus on performing as well as you can as a job applicant. Being the best interviewee is important right now. Try to do so as well as you can and also try not to make mistakes during this job interview. If you focus on performing well, demonstrating your ability, and avoiding mistakes during the interview, it will be helpful in the future if you find yourself applying for jobs.

### 9.1.3. Authenticity manipulation

Before going through the mock interview, where participants would be asked a few questions they needed to answer, they had the opportunity to have a “pre-interview” meeting with the interviewer. They were told,

The interviewer will offer a brief overview of the type of job for which you are interviewing. Please indicate your first name below so that the interviewer can refer to you by using your first name.

They were again asked to wait a minute or two for the interviewer to be ready. Then they were randomly assigned to either the authenticity or the neutral condition. In the authenticity condition, the instructions read,

In the interview, try your best to be yourself - to be genuine and authentic. Keep in mind some of the qualities that make you who you are, and that may be important to keep in mind in this context. You can write a few below.

In the neutral condition, participants did not receive any further instructions for how to behave in the interview.

Next, all participants received a message on the screen from the interviewer.

Hi. My name is John and I will be playing the role of interviewer today. Let's start our pre-interview meeting. I prepared something for you to read about the job. Just click on the bottom below when you are ready to proceed.

### 9.1.4. Challenging situation manipulation

After reading this message, participants were randomly assigned to the challenging-experience condition or a control condition. We introduced a challenging experience in the pre-interview meeting by changing the language of the message participants received from the interviewer, in which the interviewer gave a short overview of the job the interview was going to be about. In the challenging-experience condition, the language used in the message was gender-exclusive language (e.g., guys, him, he)—language that has been found to be sexist and non-inclusive (threatening) to female participants' identity (Stout & Dasgupta, 2011). The language used in the control condition, instead, was gender neutral (and it is reported in *italics* below):

Our organization is continually growing and thriving. We're looking to hire enthusiastic and bright college graduates - we usually know a good employee when we see *him* [one].

Our ideal employee is a smart and ambitious *guy* [person]. *He* is [They are] someone who can work in a fast-paced and energetic environment - we certainly wouldn't want an employee's workload to catch *him* [them] unprepared.

We expect our *guys* [employees] to help us become a leading player in our field, so when a new employee joins us, *he* [they] may be asked to stay after work hours from time to time. Naturally, he would be compensated for the extra time *he* puts [they put] in.

Finally, we believe in rewarding excellent employees. When we come across an outstanding person, we feel that rewarding *him* [them] will boost our overall productivity. Some examples of our reward system are extended paid-vacation and monetary bonuses. Our *guys* [employees] are very pleased with our current reward system; the harder an employee works, the more money *he* makes [they make]!

If you are smart, ambitious, and creative, and this work environment sounds like a good fit for you, we encourage you to apply.

### 9.1.5. Measures

Next, we assessed the mediator and measured participants' sense of perceived threat in anticipation of the job interview by asking them to indicate the extent to which they felt various emotions as they thought

about the upcoming interview using a 7-point scale (ranging from 1 = not at all, to 7 = very much so). The emotions were: anxious, stressed out, worried, and fearful ( $\alpha = 0.92$ ). As in Stout and Dasgupta (2013), we chose these emotions from classic appraisal theory research (Folkman & Lazarus, 1985; Folkman, 1984).

Participants were then told, “You are now ready for the interview. The research assistant you have been paired with has prepared three questions for you to answer.” Participants were asked to spend at least five minutes answering the following questions: (1) Why do you think you'd be a good fit for the job?, (2) What experiences do you have that make you a good fit?, and (3) In general, what do you appreciate the most about a job, based on your experience?

They were then thanked for completing this task as the candidate for the job and asked to wait a few minutes so that the research assistant they had been paired with had time to review and evaluate their answers. After a few minutes, the interview was concluded by letting them know that “Based on the answers you have written, I don't think I would recommend offering you the position. Though I can certainly think of other jobs you may be a good fit for.”

To understand their reactions to the mock interview they went through, we then asked participants to rate how they felt about the interview they had on a 7-point scale (ranging from 1 = not at all, to 7 = very much). The items, which we used to assess feelings of rejection (our dependent measure) were: rejected, disappointed, suited for the position (reverse-scored), and accepted (reverse-scored;  $\alpha = 0.54$ ).

We also asked them how likely they would be to apply for another, similar job if the interview they just went through actually occurred, using a 5-point scale (ranging from 1 = extremely unlikely, to 5 = extremely likely).

### 9.1.6. Manipulation checks

Participants also indicated their reactions to the research assistant they had been paired with. As a manipulation check for challenging experience, we assessed the extent to which they thought the interviewer was sexist (as in Stout & Dasgupta, 2013) on a 5-point scale (ranging from 1 = very slightly or not at all, to 5 = extremely): (1) Was the way in which the interviewer described the work environment sexist? (2) Was the way in which the interviewer described the work environment one that favored men over women? and (3) Based on the way the interviewer described the work environment, how macho would you expect the work environment to be at this organization? ( $\alpha = 0.96$ ).

As a manipulation check for the authenticity manipulation, we asked participants to indicate their agreement with seven statements about the experience of answering the interview questions, on a 7-point scale (ranging from 1 = strongly disagree, to 7 = strongly agree): “I was true to myself,” “I was authentic in the way I acted,” “I was really being myself,” “I felt out of touch with the real me” (reverse-scored), “I felt as if I did not know myself” (reverse-scored), “I felt authentic,” and “I felt true to myself” ( $\alpha = 0.94$ ).

## 9.2. Results

### 9.2.1. Manipulation check: Perceived sexism

A 2 (challenging experience)  $\times$  2 (authenticity) between-subjects ANOVA indicated that women found the interviewer to be more sexist in the challenging-experience condition ( $M = 3.97$ ,  $SD = 1.33$ ) than in the control condition ( $M = 1.45$ ,  $SD = 0.71$ ),  $F(1, 594) = 838.15$ ,  $p < .001$   $\eta_p^2 = 0.59$ . Neither authenticity alone nor the interaction between exclusion by authenticity affected women's perceptions of sexism ( $F_s < 1$ ).

### 9.2.2. Manipulation check: Feeling authentic

A 2 (challenging experience)  $\times$  2 (authenticity) between-subjects ANOVA indicated that women felt more authentic when answering the interview questions in the authenticity condition ( $M = 6.19$ ,

**Table 1**  
Means (and standard deviations) by condition for the measures assessed in Study 4.

		Perceived sexism	Felt authenticity	Perceived threat	Feelings of rejection	Likelihood of applying for the job in the future
Challenging experience (i.e., use of sexist language)	Neutral	3.95 (1.34)	5.19 (0.87)	3.90 (1.46)	5.53 (0.86)	2.92 (1.24)
	Authenticity	3.98 (1.32)	6.19 (1.10)	3.23 (1.80)	4.43 (1.11)	3.84 (1.37)
Control (i.e., use of gender-neutral language)	Neutral	1.44 (0.67)	5.21 (0.87)	3.14 (1.64)	5.08 (1.11)	3.50 (1.23)
	Authenticity	1.45 (0.74)	6.19 (0.90)	3.11 (1.52)	4.41 (1.03)	3.82 (1.36)

$SD = 0.99$ ) than in the control condition ( $M = 5.20$ ,  $SD = 0.87$ ),  $F(1, 594) = 167.14$ ,  $p < .001$ ,  $\eta_p^2 = 0.22$ . Neither exclusion alone nor the interaction affected women's state authenticity ( $F_s < 1$ ).

### 9.2.3. Perceived threat

A 2 (challenging experience)  $\times$  2 (authenticity) between-subjects ANOVA on participants' perceived threat in anticipation of the job interview revealed a significant main effect for authenticity ( $F(1, 594) = 7.00$ ,  $p = .008$ ,  $\eta_p^2 = 0.012$ ), a significant main effect for challenging experience ( $F(1, 594) = 11.09$ ,  $p = .001$ ,  $\eta_p^2 = 0.018$ ), and a significant interaction effect between the two,  $F(1, 594) = 6.16$ ,  $p = .013$ ,  $\eta_p^2 = 0.010$  (see Table 1). Pairwise comparisons revealed that in the challenging-experience condition, participants reported lower levels of perceived threat in the authenticity condition ( $M = 3.23$ ,  $SD = 1.80$ ) than in the neutral-experience condition ( $M = 3.90$ ,  $SD = 1.46$ ,  $p < .001$ ), but there was no difference in perceived threat between these two conditions in the control condition ( $M_{neutral} = 3.14$ ,  $SD = 1.64$  vs  $M_{authenticity} = 3.11$ ,  $SD = 1.52$ ,  $p = .91$ ).

### 9.2.4. DV: Feeling rejected

A 2 (challenging experience)  $\times$  2 (authenticity) between-subjects ANOVA on participants' feelings of rejection revealed a significant main effect for authenticity ( $F(1, 594) = 110.98$ ,  $p < .001$ ,  $\eta_p^2 = 0.16$ ), a significant main effect for challenging experience ( $F(1, 594) = 7.48$ ,  $p = .006$ ,  $\eta_p^2 = 0.012$ ), and a significant interaction effect,  $F(1, 594) = 6.32$ ,  $p = .012$ ,  $\eta_p^2 = 0.011$ . Pairwise comparisons revealed that in the challenging-experience condition, participants reported lower levels of feelings of rejection in the authenticity condition ( $M = 4.43$ ,  $SD = 1.11$ ) than in the neutral-experience condition ( $M = 5.53$ ,  $SD = 0.86$ ,  $p < .001$ ). There was also a significant difference in feelings of rejection between the authenticity and the neutral-experience condition in the control condition ( $M_{authenticity} = 4.41$ ,  $SD = 1.03$  vs.  $M_{neutral} = 5.08$ ,  $SD = 1.11$ ,  $p < .001$ ). The conditional effect of authenticity on feelings of rejection was larger in the challenging-experience condition ( $b = -1.10$ , S.E. = 0.117) than in the neutral-experience condition ( $b = -0.67$ , S.E. = 0.124).

### 9.2.5. DV: Likely to apply again

A 2 (challenging experience)  $\times$  2 (authenticity) between-subjects ANOVA on participants' likelihood to apply again for a job revealed a significant main effect for authenticity ( $F(1, 594) = 33.78$ ,  $p < .001$ ,  $\eta_p^2 = 0.054$ ), a significant main effect for challenging experience ( $F(1, 594) = 7.06$ ,  $p = .008$ ,  $\eta_p^2 = 0.012$ ), and a significant interaction effect,  $F(1, 594) = 8.07$ ,  $p = .005$ ,  $\eta_p^2 = 0.013$ . Pairwise comparisons revealed that in the challenging-experience condition, participants had higher scores for the likelihood of applying again in the authenticity condition ( $M = 3.84$ ,  $SD = 1.37$ ) than in the neutral-experience condition ( $M = 2.92$ ,  $SD = 1.36$ ,  $p < .001$ ). There was also a significant difference in the likelihood of applying again between the authenticity and the neutral-experience condition in the control condition ( $M_{authenticity} = 3.82$ ,  $SD = 1.36$  vs.  $M_{neutral} = 3.50$ ,  $SD = 1.23$ ,  $p = .035$ ). As in the case of feelings of rejection, the conditional effect of authenticity on the likelihood of applying again was larger in the challenging-experience condition ( $b = 0.92$ , S.E. = 0.153) than in the neutral-experience condition ( $b = 0.32$ , S.E. = 0.149).

### 9.2.6. Moderated mediation

To directly test for our full proposed theoretical model, we ran a conditional indirect effect model to show that experiencing a challenging situation (as captured in this study by perceived sexism) only influences feelings of rejection through perceived threat in the neutral condition, but not in the authenticity condition. We conducted these analyses using the PROCESS macro (Model 7) by Hayes (Hayes, 2013), using bootstrapping with 10,000 iterations. We found a significant interaction between our authenticity manipulation and our challenging-experience manipulation in predicting our mediator, perceived threat



( $b = -0.651$ ,  $S.E. = 0.263$ ,  $p = .013$ ), suggesting that authenticity moderates the relationship between the effect of a challenging experience on perceived threat. We then looked at the index of moderated mediation (index =  $-0.211$ ,  $S.E. = 0.089$ ), and found that authenticity significantly moderated the indirect effect of a challenging experience on feelings of rejections (i.e., indirect effect through perceived threat), as the 95% bias-corrected confidence interval excluded zero ( $-0.392$ ,  $-0.043$ ).

To probe the conditional effects, we examined the conditional indirect effect of a challenging experience on feelings of rejection in both the neutral condition and the authenticity condition. We find that the indirect effect is significant in the neutral condition (effect =  $0.247$ ,  $S.E. = 0.064$ , 95% bias-corrected confidence interval =  $[0.130, 0.380]$ ) but not in authenticity condition (effect =  $0.036$ ,  $S.E. = 0.063$ , 95% bias-corrected confidence interval =  $[-0.088, 0.160]$ ).

Similarly, we also found support for moderated mediation when using likelihood of applying again as the dependent measure (instead of feelings of rejection).

### 9.3. Discussion

Using a moderated mediation study, Study 4 provides further evidence for our full model that shows the buffering effects of authenticity after rejection in the context of a job interview.

## 10. Study 5: Nudging authenticity in a field intervention

To provide further evidence for the buffering role of authenticity and extend our findings to an organizational context, we test how to reduce employees' perceptions of exclusion at work. In an intervention study in the field, we increased authenticity among some employees but not others.

### 10.1. Method

#### 10.1.1. Participants

Three hundred four working adults ( $M_{age} = 35.08$ ,  $SD = 8.87$ , 55% male) recruited from Amazon MTurk (all located in the United States and employed full time) participated in a two-week study for \$10. They received \$1 for completing Part 1 (on a Monday), \$1 for completing Part 2 (on Friday of the same week), and \$8 for completing Part 3 (on Friday of the second week). We structured the incentives this way to assure most participants would complete all three parts of the study. We initially recruited 400 working adults, but only 304 completed all parts of the study; thus, we used this smaller sample in our analyses. As indicated in the posting, we told participants we were interested in understanding exclusion at work and that, in order to participate, they had to feel somewhat excluded.

#### 10.1.2. Procedure

The initial instructions that welcomed participants to the study included two attention checks. Those who failed one or more received a message letting them know that they did not qualify for the study, given their answers. Their data was not recorded.

In Part 1, participants completed a short survey asking them to first indicate their age and gender. Next, they completed a scale assessing exclusion at work on a 7-point scale (ranging from 1 = not at all to 7 = extremely). The scale included five items, adapted from the workplace exclusion scale (WES), which has been found to be both valid and reliable (Hitlan, Clifton, & Desoto, 2006): 1) "I feel accepted by coworkers at work" (reverse-coded), 2) "I feel I am genuinely a member of the organization" (reverse-coded), 3) "I feel ostracized by others at work," 4) "I feel excluded from work-related activities by others," and 4) "I felt included in work conversations" (reverse-coded). We averaged these items to create a measure of feelings of exclusion at Time 1 ( $\alpha = 0.84$ ). Next, we randomly assigned participants to one of

two conditions: authenticity and control. Participants in the authenticity condition read, "Please think about ways or moments at work when you feel true to yourself, when you feel truly authentic. In the next few days, try to engage in those behaviors at work that make you feel authentic, and do so more often than usual." In the control condition, the instruction read, "Please think about ways or moments at work when you feel like things are going as usual. In the next few days, try to keep life at work as usual."

We contacted participants two days later via email (on Wednesday of the same week) and sent them the same message. They also received it twice on Monday and Wednesday of the week after, the second week of the study.

We also contacted participants at the end of the first week asking them to complete a short online survey (Part 2). The instructions asked them to think about their feelings at work and answer a few questions, which assessed perceived threat (adapted from Stout & Dasgupta, 2013, Study 2). Specifically, using a 7-point scale (ranging from 1 = strongly disagree to 7 = strongly agree), they provided answers to the following six items: 1) "I feel anxious," 2) "I feel preoccupied," 3) "I feel worried," 4) "I feel a sense of fear," 5) "I just want to finish the work day quickly and leave," and 6) "I want to get the work day over with." We averaged the answers of each participant into a composite measure ( $\alpha = 0.85$ ). After they completed a few filler items, participants were also asked to answer questions about their current feelings at work over the last week, indicating their agreement with seven items: 1) "I was true to myself," 2) "I was authentic in the way I acted," 3) "I was really being myself," 4) "I felt out of touch with the real me," 5) "I felt as if I did not know myself," 6) "I felt authentic," and 7) "I felt true to myself" ( $\alpha = 0.85$ ).

Finally, at the end of the second week, we contacted participants a final time to complete the final short online survey (Part 3), which included our dependent measure: felt exclusions at Time 2. We used the same items as in Part 1 ( $\alpha = 0.85$ ).

### 10.2. Results

#### 10.2.1. Manipulation check: Perceived authenticity

Participants in the authenticity condition reported feeling more authentic ( $M = 5.02$ ,  $SD = 0.65$ ) than did those in the control condition ( $M = 4.55$ ,  $SD = 0.72$ ),  $t(302) = 5.97$ ,  $p < .001$ ,  $d = 0.69$ .

#### 10.2.2. Perceived threat

Participants in the authenticity condition reported lower levels of perceived threat ( $M = 3.29$ ,  $SD = 1.13$ ) as compared to those in the control condition ( $M = 3.82$ ,  $SD = 0.96$ ),  $t(302) = -4.45$ ,  $p < .001$ ,  $d = 0.51$  (see Fig. 4).

#### 10.2.3. Exclusion

Though we did not find significant differences in self-reported exclusion at Time 1 ( $M_{authenticity} = 4.38$ ,  $SD = 1.45$  vs.  $M_{control} = 4.50$ ,  $SD = 1.48$ ;  $t(302) < 1$ ,  $p = .45$ ), before we introduced our intervention, participants reported lower feelings of exclusion at Time 2 in the authenticity condition ( $M = 3.53$ ,  $SD = 1.48$ ) than in the control condition ( $M = 4.05$ ,  $SD = 1.22$ ),  $t(302) = -3.37$ ,  $p = .001$ ,  $d = 0.39$ . When controlling for self-reported exclusion at time 1, we still find that participants' feelings of exclusion at time 2 were lower in the authenticity condition than in the control condition,  $F(1, 302) = 12.17$ ,  $p = .001$ ,  $\eta_p^2 = 0.039$ .

#### 10.2.4. Mediation

We tested for perceived threat as the mediator of the relationship between our authenticity manipulation and feelings of exclusion. We used feelings of exclusions at Time 2 as our dependent measure and feelings of exclusions at Time 1 as covariate. Using bootstrapping with 10,000 iterations, we estimated the direct and indirect effects of authenticity through perceived threat on our dependent variable,



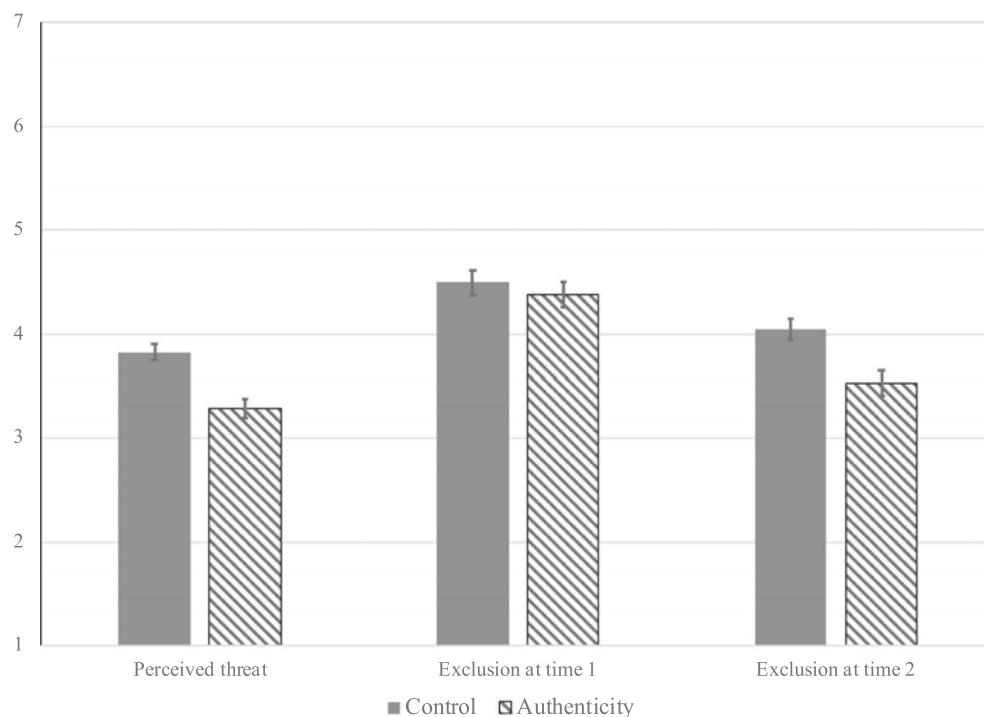


Fig. 4. Means of perceived threat and felt exclusion at times 1 and 2 by condition (error bars represent standard errors of the means), Study 5.

perceived exclusions at Time 2. The 95% bias-corrected confidence interval for the size of the indirect effect ( $-0.08$ ,  $SE = 0.04$ ) excluded zero ( $-0.171$ ,  $-0.017$ ), suggesting that perceived threat mediated the link between authenticity and lower feelings of exclusion.

### 10.3. Discussion

The results of Study 5 provide further support for our hypotheses using a longitudinal study in which we nudged some employees to act authentically at work. Employees in the authenticity condition, who received two messages a week for two weeks asking them to be authentic, reported lower perceptions of threat (at the end of the first week) and exclusion at work (at the end of the second week) as compared to employees in the control condition, who received no messages. We also found evidence for mediation: controlling for felt exclusion before the intervention took place, authenticity led to lower felt exclusion after two weeks because it lowered perceived threat.

## 11. General discussion

Increasingly, leaders of organizations across the globe have been interested in creating and effectively managing workplaces with greater diversity. Over 75% of Fortune 1000 companies, for instance, have instituted diversity initiatives (Daniels, 2001). Though some of these companies have reported improvement in the diversity of their workplaces, these improvements have not been accompanied by increased inclusion, leaving many employees feeling excluded, lonely, or ostracized, with negative consequences for their job performance (Ozcelik & Barsade, 2019). Feelings of rejections are also common outside organizations. Despite living in a society where connections with others can be easily made (e.g., through social media platforms such as Twitter and Facebook), people often experience loneliness and social exclusion. Social media allows us to find out what we are missing in our write-and-share or snap-and-share culture. Paradoxically, this real-time ability to stay connected can make the sting of exclusion much more painful. The present studies establish that feeling authentic can dampen threat responses and reduce feelings of rejection and perceived social exclusion.

In five studies employing diverse sample populations (undergraduate students and online panels of adults), we demonstrated that experiencing authenticity led to lower feelings of rejection after social exclusion. This is because being authentic led participants to appraise situations as less threatening. We established the role of perceived threat in linking authenticity to lower rejection feelings from social exclusion using different manipulations for authenticity and different measures of perceived threat and social exclusion. We also found that the effects of authenticity on lower feelings of rejection from social exclusion were not driven by general affect or self-esteem.

### 11.1. Theoretical and practical implications

These findings extend previous research emphasizing the importance and benefits of authenticity. To date, most of the work on authenticity has focused on authenticity as a trait, though state authenticity has increasingly captured the attention of psychologists and management scholars in the last few years (see Sedikides et al., 2017 for a recent review). Authenticity (as a dispositional measure) has been consistently and extensively found to be associated with positive psychological outcomes (Kifer et al., 2013; Sheldon, Gunz, & Schachtman, 2012). Here, we contribute to this body of work by primarily focusing on state authenticity and demonstrating that being authentic serves as a buffer against social rejection.

Our results also contribute to existing research on social exclusion and its negative consequences on people's psychology, health, and actions. People engage in various behaviors to reduce the pain of social exclusion, from actively seeking connections with others (Maner et al., 2007) to anthropomorphizing objects and nonhuman agents (Epley, Akalis, Waytz, & Cacioppo, 2008). Our findings identify an effective preventive strategy: simply being true to oneself.

Being socially excluded exacerbates many health outcomes, both mental and physical (Cacioppo et al., 2006). Thus, identifying ways to potentially reduce such negative outcomes is important. Importantly, we demonstrate the protective benefits of felt authenticity to reduce the pain of an impending exclusion. Rather than helping with recovery, authenticity produced lower perceived threat and experience of pain. It

may well be that other interventions, such as self-affirmation, can aid recovery from social rejection; here, we demonstrate the power of felt authenticity in perceiving threat from future situations and its protective benefits.

Even though we focused on social rejection experiences, many empirical studies have documented the threatening effects of many more situations, such as personal uncertainty, insecurity, and mortality salience; therefore, authenticity might be an effective antidote to many other aversive experiences identified in the threat and defense literature. Defensive reactions to some of these threats might also be eliminated if people are given opportunity to be true to themselves.

Given how common exclusion, loneliness, and ostracism are, organizations, schools, and society at large could benefit from interventions that heighten authenticity. In an organizational setting, Cable, Gino, and Staats (2013) found that onboarding processes that give newcomers opportunities to reflect on their strengths and uniqueness before the start of a new job boost newcomers' authenticity and self-expression, resulting in greater employee retention and better performance than traditional onboarding processes that do not offer such opportunity for reflection. Similar interventions could be used during regular events that occur throughout one's job or career that may be experienced as particularly challenging, such as performance reviews or promotions, as well as situations in which people are more likely to experience rejection or exclusion, such as applying for jobs, rejoining a firm after a leave, or joining a new team. Outside of organizational contexts, authenticity could be heightened with similar reflection exercises during the first weeks in a new class or school, as children or adolescents meet peers who may not be inclusive, or before tests and challenging exams.

### 11.2. Limitations and future directions

These contributions must be qualified in light of several limitations of our research. First, in most of our studies (except Study 5), we manipulated authenticity right before participants engaged in a task where they were socially excluded or rejected. It is unclear whether the buffering effect of being authentic would last for a long time or whether reminders of one's own authenticity are needed for these effects to persist across time. Future research is needed to explore this possibility. Furthermore, beyond perceived self-threats, there may be additional mechanisms through which authenticity creates a buffer against social exclusion. For example, it would be worthwhile to examine whether authenticity promotes persistence in the face of social pain after rejection by decreasing people's need to belong. Future research could investigate other possibilities.

Moreover, we suggested that authenticity creates a sense of security that, in turn, leads people to feel less threatened by challenging situations like social exclusion. However, our studies did not focus on the specific role of sense of security, other than in Study 3, where we measured sense of security as a proxy for perceived threat. Future research could investigate the link between sense of security and perceived threat in greater depth, thus furthering our understanding of how state authenticity lowers one's perception of exclusion after rejection.

Across our studies, we used various manipulations for authenticity. Each manipulation has its own weaknesses. For instance, the writing task may remind people of the importance of being courageous, and wearing the wristband of one's favorite team may foster a sense of belonging. Though the consistency of our findings across different manipulations gives us confidence that they allowed us to reliably induce state authenticity, future research could explore other ways to raise state authenticity, both in the laboratory and in the field.

We did not investigate moderators of the effects of authenticity on the pain people experience from social exclusion. Research could investigate, for instance, whether authenticity is more likely to lead to lower feelings of rejection after social exclusion among individuals with a low need for approval rather than among those with a high need for

approval. Another interesting moderator future work could investigate is age: it is possible that older people are less sensitive to social rejection, thus leading authenticity interventions to produce different effects for younger and older groups.

We argued that state authenticity is one psychosocial resource people can leverage to experience lower feelings of rejections after being excluded. Future research could explore how state authenticity compares to other psychosocial resources in the buffering effects it produces against social exclusion and other types of rejections. In fact, heightened authenticity as well as other psychosocial resources may bolster people's motivation when they face challenges in life or at work. Future research investigating this possibility would strengthen our understanding of the buffering effects of state authenticity and its unique effects.

In all of our studies, we manipulated authenticity before the rejection experience. Future work could investigate whether the same effects observed here would occur when authenticity is primed after rejection. Given that authenticity means acting in ways that are consistent with one's inner thoughts and feelings, and given that rejection hurts, when authenticity is heightened after rejection, it may have the paradoxical effect of prolonging the experience of pain rather than speeding it up. Examining whether this is in fact the case could uncover important boundary effects of the relationships we demonstrated here.

Finally, our research focused on the benefits of authenticity with little attention to its costs. Researchers could explore whether and when the buffering effects of authenticity keep people from re-engaging in relationships after exclusion and therefore lead to isolation.

## 12. Conclusion

We identify a consistent buffering effect of feeling authentic against social rejection. Considering the frequency of social exclusion and its well-documented negative consequences, it is important to identify interventions with protective benefits that buffer against its negative effects. Across five studies employing diverse sample populations, we find that, as compared to people who felt inauthentic or experienced something neutral, people who felt authentic felt less rejected after social exclusion. Our results suggest that authenticity may be an underutilized resource that can help people who perceive themselves to be, or actually are, socially excluded. This research suggests that authenticity interventions could be used to reduce perceptions of threatening situations and the pain of impending exclusion episodes in various situations, such as adjustment to college and organizational orientation programs.

### CRedit authorship contribution statement

**Francesca Gino:** Conceptualization, Methodology, Investigation, Resources, Writing - original draft, Writing - review & editing, Supervision. **Maryam Kouchaki:** Conceptualization, Methodology, Investigation, Resources, Writing - original draft, Writing - review & editing, Supervision.

### Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.obhdp.2020.03.006>.

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